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TITLE: Split flywheel with two elements of same sense - has two groups of springs which vary frequency of torsional oscillation with engine torque

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DE 3802106 A	August 3, 1989	N/A	000 N/A
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EP 325724B1	N/A	1988EP-0119538	November 24, 1988
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ABSTRACTED-PUB-NO: EP 325724A

BASIC-ABSTRACT:

The flywheel is made in two parts (1,2) connected to each other by a coupling which permits a limited relative angular movement between the two parts. The engine torque is transmitted from one part to the other by two groups of springs (25,26). The springs (26) in one group have an end clearance so that at low torque only the springs in the other group (25) transmit the torque.

When only these springs (25) are effective, the frequency of torsional oscillation of the flywheel is low corresponding to the low engine speed. As engine speed increases, the engine torque also increases so that the axial play of the second group of springs is taken up and the springs become effective so that the frequency of torsional oscillation is increased.

USE/ADVANTAGE - For i.c. engines with improved separation of engine and transmission without load change.

ABSTRACTED-PUB-NO: EP 325724B

EQUIVALENT-ABSTRACTS:

Divided flywheel for damping rotary vibrations in engines with internal combustion having two flywheel elements (1, 2) arranged coaxially with each other, between which the flywheel weights are substantially distributed, also having a spring arrangement connected between the flywheel elements (1, 2) which has at least two groups of springs (25, 26) connected in parallel, one of which has play, and having a frictional coupling (28-32) operative between the two flywheel elements (1, 2), characterized in that the frictional coupling (28 to 32) has play, its friction elements or friction lamellae (28, 29) being connected with play in the circumferential direction to at least one flywheel element (2), and that the spring constants of the groups of springs (25, 26) are dimensioned so that the frequencies of the vibrations which can be generated at the starting speed and no load speed of the engine lie above a low first critical frequency determined by the group of springs (25) without play and the frequencies of the vibrations which can be generated at service speeds

lie above a higher second critical frequency of the flywheel determined by both groups of springs (25, 26) conjointly.

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The flywheel sections are resiliently coupled by means of two groups of springs which are connected in parallel. One group of springs operates with play and becomes inoperative only when high torques are transmitted. At low speeds when

only low torques can be generated by the engine, the flywheel has a very low resonance frequency determined solely by the second group of springs without play.

This frequency remains below the frequencies of the vibrations which occur in this service phase. Upon the transmission of higher torques generated by the engine at higher speeds, although the resonance frequency rises due to the effect of the first group of springs with play and the resonance frequency remains below the frequency of the vibrations which occur at higher speed.

USE - For motor vehicles. (8pp)

CHOSEN-DRAWING: Dwg.2/4 Dwg.1/4

TITLE-TERMS: SPLIT FLYWHEEL TWO ELEMENT SENSE TWO GROUP
SPRING VARY FREQUENCY
TORSION OSCILLATING ENGINE TORQUE

DERWENT-CLASS: Q63

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